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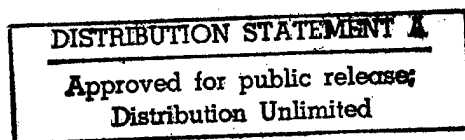
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**Statement of**  
**The Under Secretary of Defense for Acquisition and Technology**  
**Honorable Paul G. Kaminski**

**Before the**  
**Subcommittee on Research & Development**  
**of the**  
**House Committee on National Security**

**on**

**DoD-Sponsored R&D Centers**

**March 5, 1996**

Mr. Chairman, members of the subcommittee, and staff, thank you for the opportunity to appear before you today to discuss the specifics of the Department's initiatives to strengthen the management and focus of our federally fund research and development centers (FFRDCs) and university affiliated research centers (UARCs).

We are taking these actions to deal with concerns, both real and perceived, that these centers have not been right-sized; that they are working in areas beyond the core interests of the Department; and that the centers are using their special status to gain an unfair competitive advantage over commercial firms. The Department has scrutinized the operations of our FFRDCs and our University Affiliated Research Centers over the past year. We have conducted numerous independent studies and reviews and we have now introduced four major initiatives designed to manage these organizations more effectively, including

- Limiting the program content of these R&D centers to "core work;"
- Establishing stringent criteria for the acceptance of non-core work by an R&D center's parent corporation;

- Chartering an independent advisory committee to review the Department's management and oversight of FFRDCs and UARCs;
- Developing a new set of guidelines to ensure that the management fee provided to FFRDCs is based on justified need.

We believe these initiatives, along with the support of Congress, will effectively address concerns about FFRDC and UARC management and are paving the way for continued use of the critical capabilities provided by these centers. As the Department downsizes, they have become increasingly important as centers of independent technical expertise and support.

### **FFRDCs**

For nearly a half century, the Department has invested heavily in the growth of a strong research and development establishment within the United States to help sustain the technological supremacy of U.S. forces. Today, the Department of Defense (DoD) sponsors 12 not-for-profit, federally funded research and development centers (FFRDCs) to accomplish the following:

- Maintain long-term strategic relationships with their sponsoring DoD organizations;
- Perform research, development and analytic tasks integral to the mission and operations of sponsoring agencies within the DoD;
- Maintain "core" competencies in areas important to the DoD sponsors and employ these competencies to perform high quality, objective work that cannot be carried out as effectively by other organizations; and
- Operate in the public interest, free from real or perceived conflicts of interest.

Three different types of FFRDCs have evolved over time to help the Department accomplish its mission. Seven studies and analyses (S&A) centers provide DoD decision makers with objective evaluations of complex issues. Two systems engineering and integration (SE&I) centers provide experienced engineering and technical support to several DoD research and engineering centers. And finally, three research and development (R&D) centers execute key, leveraging basic research and advanced development programs in support of their DoD sponsors' material development missions.

### **7 Studies & Analysis Centers**

RAND NDRI

RAND Arroyo

RAND Project Air Force

Center for Naval Analysis (CNA)

Logistics Management Institute (LMI)

Institute for Defense Analyses (Studies & Analysis)

Institute for Defense Analyses (OT&E)

### **2 Systems Engineering & Integration Centers**

MITRE C3I

Aerospace Corporation

### **3 Research & Development Centers**

MIT Lincoln Laboratory

Institute for Defense Analyses (C3I)

Software Engineering Institute (SEI)

FFRDCs have played a key role in this nation's defense since World War II. For example, MIT's Lincoln Laboratory was originally formed in 1952 to build a prototype

air defense system against Soviet attack. By the late 1970's, Lincoln Laboratory's extensive experience and "core" competencies in radar clutter phenomenology, measurement and data analysis played a key role in the successful development of U.S. cruise missile systems capable of penetrating Soviet air defenses. This expertise also provided a foundation of knowledge critical to establishing the models and simulations needed for employment of low observables systems such as the F-117.

Similar contributions have been made to this nation's defense over the years by each of the seven studies and analysis FFRDCs. In 1956, the Institute for Defense Analyses (IDA) was formed to help key decision makers in the office of the Secretary of Defense address important national security issues, particularly those requiring scientific and technical expertise. Over the past year, IDA analysts have been instrumental in providing independent, objective assessments of the Department's heavy bomber force needs; a comprehensive tactical utility analysis of the C-17 and Non-Development Airlift Aircraft; and an ongoing study of deep attack weapon systems.

And finally, the Aerospace Corporation--a system engineering and integration center--was founded in 1960 to provide the U.S. Air Force with the technical support needed to acquire and operate space systems, including the related launch and ground systems. Over the past 10 years, the Aerospace Corporation has conducted independent launch readiness verification assessments for over 94 space launches and achieved a 98 percent launch success rate, compared with an 80 percent success rate for U.S. commercial launches over the same period.

#### UARCs

In addition to the FFRDCs, the DoD sponsors six not-for-profit, private and state university integrated laboratories that:

- Maintain long-term strategic relationships with their DoD sponsoring organizations;
- Receive DoD sole-source funding in excess of \$2 million annually to establish/maintain essential research, development and engineering capabilities defined as “core” (contract funding awarded under the authority 10 U.S.C. Section 2304(c)(3)(B), that allows the use of non-competitive procedures in order to establish or maintain an essential engineering, research, and/or development capability); and
- Operate in the public interest, free from real or perceived conflicts of interests.

Each of the DoD sponsored university affiliated research centers, like the FFRDC research and development centers, perform basic research, design and development activities in support of their DoD sponsor’s missions.

### **6 University Affiliated Research Centers**

Johns Hopkins University Applied Physics Laboratory (APL)

University of Washington Applied Physics Laboratory (APL)

Pennsylvania State University Applied Research Laboratory (ARL)

University of Texas Applied Research Laboratory (ARL)

Utah State University Space Dynamics Laboratory (SDL)

Georgia Tech Research Institute (GTRI)

The UARCs have maintained a long-term relationship with their DoD sponsor and have contributed greatly to the nation’s defense needs. Johns Hopkins University APL--the largest of the DoD sponsored UARCs--invented the concept of satellite navigation that has led to modern global positioning capabilities. Johns Hopkins also played a pivotal role in inventing, developing and prototyping the Navy’s Cooperative

Engagement Capability (CEC)--a technological and operational breakthrough that shares information between battle groups in real-time, so that an entire battle group can fight and respond to threats as a single, integrated combat system.

Penn State University ARL is responsible for the design of 21 advanced propulsors and hydrodynamics devices for Navy surface ships, submarines, and torpedoes. PSU ARL conceptualized and demonstrated the key enabling technologies and supporting research for advanced ship self-defense decoys.

The University of Washington APL solved the torpedo influence exploder problems that had plagued Navy torpedoes and is currently directing research at understanding the physics of ocean processes to better predict the performance of underwater systems.

The University of Texas ARL developed the ground station equipment used to track TRANSIT (navigation) satellites and is building the prototype of the MAXUS sonar which will replace mine avoidance sonar on attack submarines.

Utah State University SDL designed and built the Midcourse Space Experiment's SPIRIT III telescoped infrared sensor and functionally demonstrated the feasibility of a Space Based Infrared (SBIR) low earth orbit surveillance concept, now in development as part of the Space Missile Tracking System (SMTS).

The Georgia Tech Research Institute designed and constructed the world's largest Compact Antenna Test Range for the US Army. The range has allowed the Army to map and test microwave antenna patterns installed on vehicles as large as the M1 Tank which greatly enhanced the ability to reduce interference and maximize performance.

#### **IMPORTANCE OF R&D CENTERS**

The core work that our centers perform is vitally important to our national security. Over the past year, the Department has carefully reviewed its relationships with FFRDCs and UARCs. I formed a senior level DoD Advisory Group to examine the issue, and chartered an independent review by a Defense Science Board task force of the Department's FFRDC management and employee compensation practices. The primary question I posed to both groups was: Do we still need these organizations? The answer was a clear and emphatic "yes."

The Defense Science Board felt that "...the FFRDCs should be retained on the strength of their quality and the special relationships they have with their sponsors on matters which are of great importance to the Department of Defense." Our internal Advisory Group reached a similar conclusion after reviewing alternatives to FFRDCs and UARCs. The bottom line is that we believe--and this belief is held widely in the Department, both by civilian and military leaders--that FFRDCs are doing high-quality, high-value technical and analytic work that could not be provided as effectively by other means. Let me assure you that the people who complain about FFRDCs are not the users of their services or the recipients of their products. FFRDCs and UARCs are doing their jobs for DoD and doing them well.

The essence of their value to DoD lies in the qualities that I mentioned previously, starting with the long-term strategic relationship FFRDCs and UARCs maintain with the Department. I might note that this is one area where DoD has been in front of the commercial sector in its acquisition practices. Successful commercial firms are moving increasingly toward establishing long-term, strategic relationships with trusted suppliers. They have found the result is often a higher quality product, at lower overall costs, in contrast to the previous practice of changing suppliers based on low bids. DoD has long realized this benefit from FFRDCs and UARCs.



I am not arguing that competition is inappropriate. The Department uses competitive processes to obtain the overwhelming majority of the goods and services it requires. But there are some circumstances and some kinds of work, for which the value provided by a strategic relationship outweighs the potential gains of competition.

## STRENGTHENED MANAGEMENT PRACTICES

I also asked the DoD Advisory Group to assess the management of FFRDCs and UARCs, and as a result of this review I approved a "DoD Management Action Plan" to ensure the most effective and prudent use of the centers while providing measures to guard against misuse. I forwarded that plan to Congress in May 1995. Since that time, we have introduced a number of initiatives designed to manage these centers more effectively. I will describe four that I believe to be the most important.

First, we have implemented a "core" work concept for managing the workload of the FFRDCs and UARCs. This core concept is what I would describe as a "stick to your knitting" approach in terms of maintaining the capabilities and competencies that are at the core of the strategic relationship. In doing this, each FFRDC/UARC sponsor developed a statement defining what is core work for each center. In addition, each sponsor developed and applied specific core criteria to ascertain whether a task is within the scope of the core statement. These criteria were applied to all ongoing fiscal year 1995 work and to each proposed task submitted for fiscal year 1996. As a result of the program assessment, sponsors identified a total of about \$43 million as non-core in the FFRDCs and about \$26 million in the UARCs. These non-core tasks have been, or will soon be, transitioned out of the centers in a logical way and be offered to the non-FFRDC private sector, as applicable.

Second, we have established stringent criteria for the performance of non-FFRDC work by the center's parent corporation. Basically, all non-FFRDC work is subject to sponsor review and/or approval and it: (1) must not detract from the performance of FFRDC work, (2) must be in the national interest, (3) must not undermine the independence, objectivity or credibility of FFRDC work, and (4) may not be acquired by taking advantage of access to or information available to the parent through its FFRDC/UARC.

Third, we have an Independent Advisory Committee (IAC), with membership of highly respected people from outside of the Government, to review and advise on the Department's management and oversight of its centers. The IAC has already begun its work and is expected to submit the first report this summer.

Fourth, we developed a revised set of guidelines to ensure the management fees provided to our FFRDCs are based on need and FFRDC provided justification. The new fee guidelines will recognize that FFRDCs, like other defense contractors, incur business expenses that are not allowable charges to their contracts but are instrumental in providing FFRDCs the flexibility to remain centers-of-excellence and sustain successful, high quality operations. However, the new guidelines are expected to reduce the amount of fee, through elimination from fee costs that are reimbursable, and tighter controls of costs that are non-reimbursable, but considered ordinary and necessary.

### **CORE WORKLOAD**

Together, FFRDCs and UARCs account for about 4.8 percent of the President's fiscal year 1996 RDT&E budget request (about \$1.7 billion of a total \$34.9 billion). Funding for our FFRDCs has come down since the peak levels in fiscal year 1991 at about twice the rate of the overall decline in the Department's RDT&E budget. Another ten percent of the RDT&E budget goes to in-house labs, and the remaining 86 percent goes to industry mostly via competitive processes.

At this point, it is important to underscore that FFRDCs cannot compete by Government-wide regulation and UARCs are precluded by contract from competing for a majority of the 86 percent. It would be inappropriate for organizations with the high level of access to information and close sponsor working relationships maintained by

FFRDCs and UARCs to compete with other firms that do not share this same level of access.

Given the mission of the FFRDCs and UARCs, staff years of technical effort is the best measure for core workload. For FFRDCs, the Director, Defense Research & Engineering (DDR&E) will annually determine how many staff years of technical effort are required by each center based on several factors, including sponsor needs and the guidelines for determining workload for each category of FFRDC. These guidelines, to be applied by the FFRDC sponsor in projecting workload and funding requirements for each category are:

- **Studies and analyses (S&A) centers** shall maintain a relatively stable annual-level-of-effort in order to support core competencies important to their sponsors and to avoid the loss of continuity and expertise that arises from major changes in staff levels. Their core workload will focus on the kinds of work that cannot be as effectively performed either in-house or by other private sector resources.
- **Systems engineering and integration (SE&I) centers** shall maintain a long-term, stable core competency when the sponsor has determined that no in-house or other private sector capability exists to perform the requirement as effectively. SE&I staffing levels will respond to changes in workload and funding consistent with the trend in the most relevant portions of the DoD budget (R&D and/or procurement) supporting the types of programs/systems within the FFRDC mission area.
- **Research and development (R&D) centers** shall maintain the technical expertise and related core competencies necessary to address those essential

requirements, priorities and objectives of the FFRDC sponsors, the applicable DoD advisory/oversight group and the DDR&E.

From the annual workload requirements provided by the sponsors, the DDR&E will allocate a dollar funding level for each center and maintain a five-year projection for planning purposes. Requests for deviations from or exceptions to established annual funding levels will be submitted for resolution by the FFRDC sponsor, with appropriate justification to the DDR&E.

The process for UARCs is similar to the above, with its focus on ensuring that annual staff years of technical effort at each UARC represents those essential engineering, research, and/or development capability defined in the core statement and awarded non-competitively per 10 U.S.C. 2304(c)(3)B.

As I earlier mentioned, funding for our FFRDCs has been on the decline since fiscal year 1991. This decline has been consistent with the overall trends in defense downsizing and outsourcing. Its consistent with the trends in taking down the force structure as well as the overall budget. I believe we now have reached steady state conditions, and that further reductions beyond the core levels planned for fiscal year 1996 jeopardize the retention of essential core capabilities, and therefore, would be harmful to our national security interests.

### **FISCAL CEILINGS**

The Department has responded to Congressional direction from previous years. We are applying more management attention to FFRDCs, and we intend to continue doing so in the future. Our management processes involve senior leadership of FFRDC sponsoring offices--some of whom are with me today--with broad oversight provided by my office. The Independent Advisory Committee will provide the Department with

an independent assessment of its management activities. The FFRDC program is now among the most intensely scrutinized and overseen in the Department.

In sum, the Department has gotten the message. We have implemented management reforms, and it is now time to restore the normal process for fiscal oversight of FFRDCs and UARCs. Accordingly, we are requesting the four Defense Committees to discontinue the practice--started a few years ago--of inserting special language in annual Bills to limit DoD spending at FFRDCs and UARCs. Such measures are no longer needed, and they constrain unnecessarily DoD's ability to use FFRDCs and UARCs for appropriate work. Let me offer two examples.

First, Lincoln Laboratories--one of our research FFRDCs--must frequently buy advanced components from industry for demonstrations and prototypes in support of Defense programs. These technical subcontracts are in addition to the funding required to support laboratory personnel and ongoing research. Given the continuously decreasing fiscal ceilings provided by Congress, we could only fund these technical subcontracts by reducing some other part of the laboratory program, or by cutting another FFRDC. Neither alternative is desirable.

Second, several FFRDCs are being called upon for technical assistance and analytic support for our Bosnia deployment. These efforts were not planned at the beginning of the fiscal year, and to make room within the fiscal ceilings, we would have to defer other needed FFRDC work. Again, this is not desirable, and it is not good management practice.

As an interim measure for fiscal year 1996, I ask that the Committee support an amendment to the Appropriations Bill that exempts the following FFRDC expenditures from counting against the fiscal year 1996 FFRDC ceiling: (1) major procurements from

industry for demonstrations and prototypes; and (2) technical assistance and analytic support for our Bosnia deployment.

My general point is that no overall fiscal ceilings are imposed on any other class of DoD contractor. In all other cases, the Department is free to select the best mix of contractors to meet our changing needs, consistent with program priorities and funding provided by the Congress. The additional constraints on DoD FFRDCs and UARCs are not required. They inhibit the Department's ability to allocate resources flexibly to get the most efficient mix of technical and analytic support. I would appreciate the Committee's support in allowing DoD to manage its FFRDCs without externally imposed fiscal ceilings.

### **MITRE RESTRUCTURE**

On a separate, but related issue of high interest, I want to reiterate the Department's general support for the MITRE Corporation's split into two separate, non-affiliated companies, with no common Trustees, officers or staff. The "MITRE Corporation" will continue to operate its two existing FFRDCs (the C3I FFRDC for DoD and the Center for Advanced Aviation System Development FFRDC for the FAA). The new entity will be a not-for-profit corporation formed out of the two non-FFRDC divisions from the old MITRE.

The Department believes that the split will focus the MITRE Corporation on its FFRDC operations and neutralize any concern about the use of FFRDC status to gain unfair advantage over commercial firms. The Department did not specifically mandate the split, but it did establish firm new rules regarding non-FFRDC activities, and the split was MITRE's response.

### **SUMMARY**

To summarize the Department's initiatives to strengthen FFRDC and UARC management:

- The work content and the operations of each of these centers have been closely scrutinized over the past year. FFRDCs and UARCs are sized consistent with essential sponsor requirements, defense acquisition reform initiatives, strategies and budgets.
- We have strengthened our management controls, including managing the workload of our centers to the core concept; transitioning ongoing work that is non-core out of the centers; and developed consistent management fee guidelines.
- We have established new stringent criteria for the performance of non-FFRDC work by the parent corporation of an FFRDC.
- The "Independent Advisory Group" is operating as a source of judgment to help communicate to the Congress and the public the adequacy of DoD management actions

In closing, let me underscore my own sense and that of the entire team here. The FFRDCs and UARCs are critically important national assets. They have provided key contributions in the past and will address critical needs now and in the future. Proactive management on the part of the Department will ensure the sustainment of these contributions. These assets are the kind that take a long time to develop and their long-term care is of the utmost importance to all of us--we need the Congress' continued support.



Mr. Chairman, thank you for this opportunity to report on the DoD-sponsored FFRDCs and UARCs.